

CLAIMS

1. Blade crusher, characterised by an operation which combines a crushing action with a double shearing action in two orthogonal spatial planes.

2. Crusher according to Claim 1, characterised in that the orthogonal planes are vertical and horizontal planes.

3. Crusher according to Claim 1, characterised in that it comprises at least two successive pairs of movable toothed blades forming jaws, each pair consisting of two opposite corresponding toothed blades (1,2) driven in a reciprocating motion moving them apart (f2) and bringing them together (f1) so as to abut against one another when the teeth engage in one another, at least part of the teeth of the blades (1,2) possessing a face oriented perpendicularly to the plane of the reciprocating motion of the blades, and the second pair of blades sliding against the first pair of blades so as to come into abutment in a position offset with respect to the abutment position of the first pair of toothed blades.

4. Crusher according to Claim 2, characterised in that the blades (1,2) constituting the pairs of blades are in a vertical position and have teeth (11) possessing, at least in part, horizontal surfaces oriented respectively upwards (15) and downwards (14), so that the double shearing action is due to a vertical shearing action produced by the crossing of the successive blades sliding against one another, combined with a horizontal shearing action produced by the crossing of the faces of the teeth oriented respectively upwards (15) and downwards (14), sliding against one another.

5. Crusher according to Claim 4, characterised in that the blades extend upwards by way of upper zones (7 and 9

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add a₂
Sub a₁

respectively), which are likewise toothed, but which do not engage in one another, adopting in contrast a V-shaped geometric position forming a hopper when the toothed blades are engaged in one another in the lower abutment zone (8 and 10 respectively).

6. Crusher according to Claim 4 or 5, characterised in that, in the abutment zone (8 and 10 respectively), the toothed blades (1,2) constituting the pairs are oblique.

7. Crusher according to Claim 4, 5 or 6, characterised in that, in the abutment zone (8 and 10 respectively), the toothed blades (1,2) constituting the pairs possess a curved, for example S-shaped, profile.

8. Crusher according to one of the preceding claims, characterised in that fixed blades are interposed between the movable blades.

9. Crusher according to one of Claims 4 to 8, characterised in that it comprises in the lower part a cutout (17) forming a free space (18) in which the teeth of the opposite blade do not come into abutment.

10. Crusher according to one of Claims 4 to 9, characterised in that it comprises in the lower part and at the extremity another cutout (20) which cooperates with a nose or nib (19) projecting concordantly on the opposite blade.

11. Crusher according to one of the preceding claims, characterised in that the blades are brought together and moved apart on a linear path situated in the same plane, or in two planes forming between them an obtuse angle other than 180° , the converging motion in this case being oblique.

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5 13. Crusher according to one of the preceding claims, characterised in that it is in modular form, it being possible to add pairs of toothed blades alongside existing blades to increase the crushing capacity, or remove them to reduce the capacity, weight and space taken up.

14. Multi-stage crushing assembly, comprising a plurality of crushers according to one of the preceding claims installed in series, characterised in that the crushed material obtained by one crusher feeds the following crusher of the series.

15. Medical waste-sterilising installation, characterised in that it comprises, as a unit placed upstream of a microwave sterilising apparatus, a crusher according to any one of the preceding claims or a crushing assembly according to Claim 14.